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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,485	01/27/2004	Wen-Liang Hsu	DN2001-239P01	9532
7590		03/25/2005	EXAMINER	
			LU, C CAIXIA	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/765,485	Applicant(s) HSU ET AL.	
	Examiner Caixia Lu	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/1/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-15, drawn to a process for copolymerization of isoprene and butadiene, classified in class 526, subclass 144.
 - II. Claims 16-20, drawn to a catalyst composition, classified in class 502, subclass 154.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and process of using the product. The use as claimed cannot be practiced with a materially different product. Since the product is not allowable, restriction is proper between said method of making and method of using.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

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6. During a telephone conversation with Attorney Alvin Rockhill on March 15, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

8. The disclosure is objected to because of the following informalities:

The limitation of the "halogenated organic compound that does not contain labile halogen atom" should not include any halogenated organic compound which can function as a halogenating agent because a halogenating agent must contain at least one labile halogen. Therefore, halogenated organic compounds such as chloroform and carbon tetrachloride listed as chlorinating agents on page 10, lines 8-24 do not fall in the definition of the "halogenated organic compound that does not contain labile halogen atom".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 11, 13, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11

Claim 11 is currently depended on a non-existing claim--claim 62. It seems claim 62 should be replaced by claim 6.

Claim 13

The “,” in line 3 of the instant claim should be deleted.

Claim 15

(i) According to the disclosure of page 10, lines 8-14, it is the catalyst system being prepared in the absence of compound that contain labile halogen atoms rather than “the catalyst system is void of labile halogen atoms”. Clarification is requested. Furthermore, after treating the aluminum modified Group III-B metal containing catalyst component with a halogen containing compound, the resulted Group III-B metal containing catalyst must containing a halogen atom bonded to the Group III-B metal or aluminum and such a halogen atom is a labile halogen atom.

Applicants are also reminded that the limitation of the “halogenated organic compound that does not contain labile halogen atom” should not include any

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halogenated organic compound which can function as a halogenating agent because a halogenating agent must contain at least one labile halogen.

(ii) The instant claim is incomplete in that the content after term "and" at the end of the claim is missing.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sone et al. (US 6,130,299).

The instant claims are directed to process for copolymerizing isoprene and 1,3-butadiene in the presence of a Group III-B metal containing catalyst prepared by reacting a Group III-B metal compound such as neodymium neodecanoate with an organoaluminum compound such as trialkyl aluminum to form an aluminum modified Group III-B metal compound and then mixing aluminum modified Group III-B metal compound with a halogen containing compound such as carbon tetrachloride.

Sone teaches a method for preparing a conjugated diene in the presence a Group III-B metal containing catalyst obtained by the reaction of Group III-B metal compound, an organoaluminum compound and a halogen-containing compound, wherein there is no limitations to the order of addition of those components (col.2, lines

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39-59; col. 5, lines 20-28; and col. 6, lines 5-50). Sone's Example 1 of col. 9 demonstrate the preparation of Group III-B metal containing catalyst by reacting neodymium octanoate, triisobutyl aluminum and diethylaluminum chloride, and then aging the catalyst mixture in 1,3-butadiene. Sone also teaches that two or more of conjugated dienes such as butadiene and isoprene can be copolymerized (col. 7, lines 25-35).

Therefore, it would have been obvious to a skilled artisan at the time the invention was made to employ Sone's teaching to conduct the copolymerization of the butadiene and isoprene in the presence of the Group III-B metal containing catalyst with or without aging the catalyst because since such is within the scope of Sone's teaching and in the absence of any showing of criticality and unexpected results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.


Caixia Lu, Ph. D.
Primary Examiner
March 19, 2005